

RampMate™

For automated hands-free management of bulk baggage

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RampMate™ system in Copenhagen Airport.

The RampMate™ system

Automation of the handling process for bulk baggage (non-containerised baggage) has taken a dramatic step forward with the new RampMate™ system.

The system bridges the gap in the traditional baggage handling by automating the make-up process for outbound baggage and the input process for inbound baggage. Human interaction is consequently reduced to a minimum.

The 100% accurate track and trace of each bag through the entire process and combined with handheld PDAs for operators on the ramp offers the benefit of built-in last minute baggage reconciliation.

The system is supervised and controlled by a dedicated server, which interfaces with common airport IT systems such as SAC, FIDS, CUTE, CUTES etc.

Up to 50% reduction of direct manpower for handling of bulk baggage to be expected due to the automation of the handling processes.

Expected reduced turnover of operators leads to savings of indirect costs related to administration, recruitment, training etc.

Quality benefits

The reduction in human interaction with the baggage minimises the possibility for human errors and subsequently a reduced number of mishandled bags.

The retrieval of individual bags is made easy with the track and trace function combined with inventory for the individual storage lanes in the carts, even between make-up and loading to the flight.

Safety benefits

Less human interaction with the baggage reduces the possibility for unwanted "tampering" with the bags.

Full track and trace means that the system offers inherited reconciliation, and facilitates late retrieval of bags that are not allowed for loading to the flight.

The RampMate™ system is enclosed, and can be sealed to make it visible if unauthorised personnel have accessed the loaded cart.



Benefits

Operational benefits

Baggage handlers move away from repetitive work and heavy lifts towards a machine operating/supervising role and the possibility to expand their work profile.

Main components

3B Cart

The unique 3B Cart connects the system components in the baggage area with the aircraft. In the present design, each cart has 8 gravity lanes, arranged two by two in 4 levels for storage of baggage. The cart can hold up to 40 bags at a time. The box containing the storage lanes is mounted on the chassis with a pivot and turns plus/minus 90° to allow loading or unloading by gravity.

In most cases two 3B Carts form a train pulled by a conventional ramp tractor.

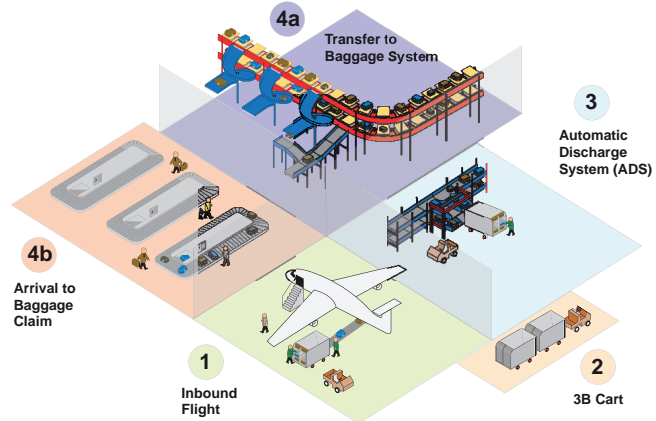
AMU - Automatic Make-up Unit

The baggage is automatically loaded onto the 3B Carts in the make-up area. The AMU is built to interface with a variety of baggage handling systems, both new and existing and regardless of technology. A complete RampMate™ system installation contains a number of AMU units based on the throughput requested.

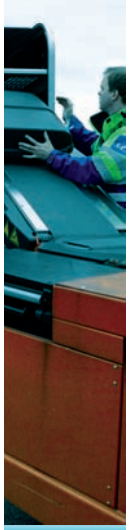
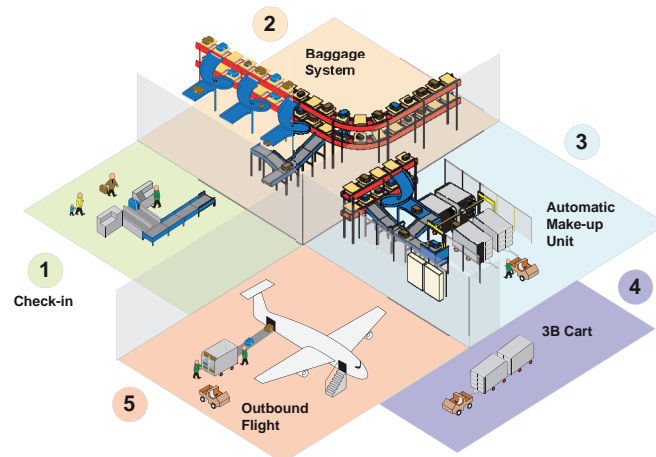
ADS - Automatic Discharge System

Inbound bags are transferred from the aircraft to the 3B Carts by means of an aircraft loading system like Rampsnake™. The loaded carts are taken to the baggage handling area, where the ADS automatically unloads and separates bags bound for the arrival carousels or for transfer. The ADS layout may vary according to the actual requirement but it contains a fixed number of Automatic Cart Unit interface devices (ACUs).

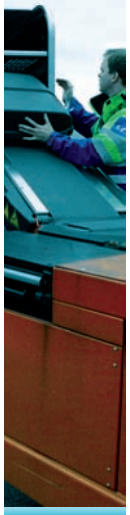
Inbound



Outbound



Specifications



3B Cart

Max. baggage dimensions (L x W x H):
1000 x 700 X 350 mm.

Min. baggage dimensions (L x W x H):
200 x 200 x 75 mm.

Max / min. weight per bag: 50 / 0.5 kg.

Overall dimensions of 3B Cart (L x W x H) mm: 3,000 x 1,600 x 2,400 mm.

Storage lanes 650 mm wide, 2,800 mm long: 8 (2 by 2 in 4 levels).

Expected accumulation capacity:
35 - 45 bags.

Max. speed during transport: 30 Km/h.

AMU - Automatic Make-up Unit

As default each AMU delivers bags to four 3B Carts.

As an option the AMU can be configured for a higher or lower numbers of carts according to individual airport requirements.

Max. baggage dimensions (L x W x H):
1000 x 700 X 350 mm.

Min. baggage dimensions (L x W x H):
200 x 200 x 75 mm.

Max / min. weight per bag: 50 / 0.5 kg.

AMU loading capacity (target): 250 bags per hour.

Foot print (using 4 Carts): 7,700 x 7,400 mm.

ADS - Automatic Discharge System

In-gauge RampMate™ baggage dimensions:

Max. dimensions (L x W x H): 1000 x 700 X 350 mm.

Min. dimensions (L x W x H): 200 x 200 x 75 mm.

Max/min. weight per bag: 50/0.5 kg.

Out-of-gauge baggage dimensions:

Max. dimensions (L x W x H): 1000 x 700 X 650 mm.

Min. dimensions (L x W x H): 200 x 200 x 75 mm.

Max/min. weight per bag: 50/0.5 kg.

Footprint of one Automatic Cart Unit ACU: 650 x 2400 mm.

Unloading capacity (peak): 2,400 bags/h.

Time to unload one train (two 3B Carts): 2 minutes.

All measurements are approximate.